CE-11 Experiments

Conditions needed to excite benefits?
Simulation capabilities needed?
Independent variables for testing robustness?

- Develop capabilities to support a nominal CE-11 concept to include some level of maneuvering
    - What are the limits of feasibility under variations in aircraft mix, winds, crossing fix accuracy (initial conditions)
    - Are maneuvering capabilities needed to address these variations?
    - There may be a range of maneuvering possible or feasible (minor = seconds; major = minutes)
    - Need to address need for maneuvering in more detail in Tiger Team (one month)

Are controllers capable of detecting and handling non-conforming aircraft?

- We could add non-conforming aircraft to test robustness of concept

There are several independent variables we could systematically vary to test the feasibility or robustness of CE-11, as follows:

- Aircraft type mix
- Aircraft mixed operations ratio (managed vs. self-spacing/merging)
- Wind uncertainty
- Flow upsetting events
- Wake vortex spacing matrix (a la AVOSS)
- Crossing fix temporal accuracy (initial conditions)

Possible DVs (outcome measures) for these potential experiments include pilot/controller workload, SA, spacing accuracy, throughput, wake vortex spacing compliance

Is the concept robust to flow upsetting events?

- Variations in the delay between the metering fix and the runway threshold (e.g., due to runway closure, change in wake vortex spacing matrix, airport acceptance rate, overloading in the TRACON)

Should we run an integrated CE-5/11 simulation or have separate experiments?

- Run separate but concurrent simulations?
- More efficient to run a continuous experiment
- More face validity
- We need to decide this issue in the Exp Design TT, with the right members (including developers) and information (e.g., demo in AOL)
    - This TT needs input from Issues TT and developers
- Need to decide by end April for integrated vs. separate recommendation
- Have TIM to review TT recommendations
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